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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/918,783	07/31/2001	Bingchiang Jeng	H010006	2202

34003 7590 09/01/2004

INTELLECTUAL PROPERTY SOLUTIONS, INCORPORATED  
5717 COLFAX AVENUE  
ALEXANDRIA, VA 22311

EXAMINER

HIRL, JOSEPH P

ART UNIT	PAPER NUMBER
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2121

DATE MAILED: 09/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/918,783

**Applicant(s)**

JENG ET AL.

**Examiner**

Joseph P. Hirl

**Art Unit**

2121

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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### **DETAILED ACTION**

1. Claims 1-7 are pending in this application.

### ***Information Disclosure Statement***

2. There are no USPTO form 1449 in the IFW. Please submit as appropriate.

### ***Claim Objection***

3. Claim 4 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Independent claim 1 does not cite "implementing a level equation ..." which as stated in dependent claim 4 expands the claim perspective of claim 1.
4. Claim 6 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only. See MPEP § 608.01(n). Accordingly, the claim 6 has not been further treated on the merits.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 3 recites the limitation "between the two said PRNs" in lines 5 and 6.

There is insufficient antecedent basis for this limitation in the claim.

7. Claims 2, 5, and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 2 cites "like those", claim 5 cites "the rest of" and claim 6 cites "near-zero", all of which are relative terms and renders the respective claim indefinite.

***Claim Rejections - 35 USC § 101***

8. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

9. Claim 7, is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Since the training data set can be generated by a domain expert, and one domain expert would be different from another, the functionality of the PRN would therefore differ depending on the training data set.

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Consequently, a repeatable solution as a function of the domain experts is not possible and the concept of concreteness is not present. Therefore, claim 7 is non statutory under 35 U.S.C. 101.

***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

11. Claims 1, 4, and 6 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Mehrotra et al (Elements of Artificial Neural Networks, referred to as **Mehrotra**). These claims are rejected under the concept of product –by-process where the reference teaches a product that appears to be the same as, or an obvious variant of, the product set forth in a product-by-process claim although produced by a different process. Claim 1 produces a PRN. Claims 4 and 6 extract values from the PRN. (**Mehrotra**, p 136-139; Examiner's Note: units are nodes; input, output, and hidden are obvious; state is an internal node; the equations are weighted at least by unity; nodes have links).

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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13. Claims 2, 3, 5, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Mehrotra et al (Elements of Artificial Neural Networks, referred to as **Mehrotra**).

#### **Claim 2**

Mehrotra anticipates creating an initial structure of the said PRN (**Mehrotra**; p 137) creating a training set with special arrangements (**Mehrotra**; p 138; EN: random chosen weights); and training the said PRN with the said training set (**Mehrotra**; p 138).

#### **Claim 3**

Mehrotra anticipates representing a target SDM as said PRN (**Mehrotra**; p 136, l 7-13; EN: a function approximation problem is an SDM); according to the intention of a model constructor, training said PRN with a special arrangement data set like those in said claim 2 (**Mehrotra**; p 138; EN: random chosen weights); and identifying the changes in structure and parameters values between the two said PRNs, which leads to an overall policy for model manipulation (**Mehrotra**; p 136-139 EN: this claim is indefinite since the two PRNs have not been identified).

#### **Claim 5**

Mehrotra anticipates creating a set of two-part training tuples (**Mehrotra**; p 138; EN: random and a given  $d_k(t)$ ) with the input part representing values for said input units and the output part representing values for said output units (**Mehrotra**; p 138; EN: random and a given  $d_k(t)$ ); assigning both of the two parts of said first training tuple with the initial values of levels and constants (**Mehrotra**; p 138; EN: random and a given  $d_k(t)$ ) assigning the output part of the rest of said training tuples with the historical time series of data from said levels and constants, with one tuple for each time step (**Mehrotra**; p 138; EN: as incremented by time counter  $t$ ); resetting the input part of the rest of said

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training tuples to zero (**Mehrota**; p 136; eqn 4.3; EN: as external inputs are reset) and ordering said training tuples in time sequence (**Mehrota**; p 138; EN: as incremented by time counter t).

#### **Claim 7**

Mehrotra anticipates using a flat line as the training data set if the problem is to search for a policy that will generate a stable trajectory for a given model (**Mehrota**; p 138; l 4; EN: slope is zero, i.e. flat line); and generating the training data set either by an optimal algorithm or manually by a domain expert if the problem is to search for a policy that will generate a growing trajectory for a given model (**Mehrota**; p 138; EN: training data set is the set of weights assigned in training; such data are established by the Recurrent Supervised Training Algorithm; growing trajectory for a given model for some time t is given by line 8 of the Recurrent Supervised Training Algorithm).

#### ***Examination Considerations***

14. The claims and only the claims form the metes and bounds of the invention. "Office personnel are to give the claims their broadest reasonable interpretation in light of the supporting disclosure. *In re Morris*, 127 F.3d 1048, 1054-55, 44USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. *In re Prater*, 415 F.2d, 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969)" (MPEP p 2100-8, c 2, l 45-48; p 2100-9, c 1, l 1-4). The Examiner has full latitude to interpret each claim in the broadest reasonable sense. Examiner will reference prior art using terminology familiar to one of ordinary skill in the



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art. Such an approach is broad in concept and can be either explicit or implicit in meaning.

15. Examiner's Notes are provided to assist the applicant to better understand the nature of the prior art, application of such prior art and, as appropriate, to further indicate other prior art that maybe applied in other office actions. Such comments are entirely consistent with the intent and spirit of compact prosecution. However, and unless otherwise stated, the Examiner's Notes are not prior art but a link to prior art that one of ordinary skill in the art would find inherently appropriate.

16. Examiner's Opinion: Paras 12. and 13. apply. The Examiner has full latitude to interpret each claim in the broadest reasonable sense.

### ***Conclusion***

17. The prior art of record and not relied upon is considered pertinent to applicant's disclosure.

- Tawel, U.S. Patent 5,371,834
- Thiel, Detecting Attractors in Production Systems by using System Dynamics and Neural Networks
- Madachy, System Dynamics Modeling of an Inspection-Based Process
- Forrester, System Dynamics, System Thinking and Soft OR

18. Claims 1-7 are rejected.

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***Correspondence Information***

19. Any inquiry concerning this information or related to the subject disclosure should be directed to the Examiner, Joseph P. Hirl, whose telephone number is (703) 305-1668. The Examiner can be reached on Monday – Thursday from 6:00 a.m. to 4:30 p.m.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Anthony Knight can be reached at (703) 308-3179.

Any response to this office action should be mailed to:

Commissioner of Patents and Trademarks,

Washington, D. C. 20231;

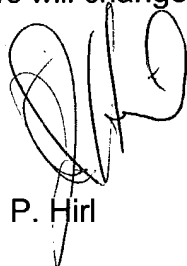
or faxed to:

(703) 746-7239 (for formal communications intended for entry);

or faxed to:

(703) 746-7290 (for informal or draft communications with notation of "Proposed" or "Draft" for the desk of the Examiner).

Note: During the last two weeks of October 2004, Art Unit 2121 will move to Carlyle, Randolph Building, 5<sup>th</sup> floor and my phone and fax number will change to: 571-272-3685 and 571-273-3685, respectively. Similarly, Anthony Knight's phone and fax numbers will change to: 571-272-3687 and 571-273-3687.



Joseph P. Hirl

August 26, 2004